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10/502,454

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Kari Hjelt

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EXAMINER

PATEL, PUNAM

ART UNIT

PAPER NUMBER

2855

DATE MAILED: 12/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/502,454

Applicant(s)

HJELT ET AL.

Examiner

Punam Patel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 26-53 is/are pending in the application.
- 4a) Of the above claim(s) 35-39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-50 and 53 is/are rejected.
- 7) ☒ Claim(s) 51 and 52 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claims 31, 40, 44/42, 44/43, 45, 46, and 52 are objected to because of the following informalities:

Claim 31 contains the limitation “the path.” There is insufficient antecedent basis for this limitation in the claim.

Claim 40 contains the limitations “the status” and “the acceleration sensor arrangement.” There is insufficient antecedent basis for these limitations in the claim.

Claims 44/42, 44/43, and 46 contain the limitation “the detecting means.” There is insufficient antecedent basis for this limitation.

Claim 45 contains the limitation “the identity of detecting means.” There is insufficient antecedent basis for this limitation. Furthermore, the limitation is grammatically unsound.

Claim 44/43 further contains the limitation “the single block.” There is insufficient antecedent basis for this limitation in the claim.

Claim 52 contains a grammatical error and the limitation “the status *at the* two most recent power-up and power-down events.” There is insufficient antecedent basis for this limitation in the claim. For the purposes of examination the limitation will be read as “the status of two most recent power-up and power-down events.”

Appropriate correction is required.

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Claims 35-39 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims have not been further treated on the merits.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claim 53 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. A typographical error has the claim depending upon itself; it is unclear as to what claim the applicant intended claim 53 to depend upon. Also, the limitation “if a current status indicated by the previous time-stamped data” is a fragment and it is not understood as to what method step should occur when the if-condition is met. The claim is generally narrative and indefinite, failing to conform with current U.S. practice. It appears to be a literal translation into English from a foreign document and is replete with grammatical and idiomatic errors.

With respect to Claim 53, no rejection based on prior art is proper at this time due to the informal nature of the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 26-28, 30-34, 40, 42, 43, 49, and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seidel et al. (US 6,122,965) in view of Shinji (JP 62036561).

With respect to Claims 26, 30, 32, and 49, Seidel et al. teach, in Figure 1 and the Abstract, a method with an apparatus comprising a group of at least two acceleration sensors arranged on one carrier: wherein each acceleration sensor comprises a first body portion (#5), a second body portion (#3a), an interconnecting element (#4a) making the first body portion integral with the second body portion and a detector (#7) arranged for giving an indication when a second body portion damages the interconnecting element (column 2, line 50 to column 4, line 25, wherein the deformation of #4a due to the movement of #3a is read as damaging the detecting means), and wherein at least two of the sensors are oriented differently from one another, such that a first sensor is more sensitive than a second sensor to a force in a first direction, and the second sensor is more sensitive than the first sensor to a force in a second

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direction (col. 1, lines 52-57). The method comprises the step of giving an indication when a second body portion damages the interconnecting element.

However, Seidel et al. fail to teach the interconnecting element being *breakable* when an external force affecting the second body portion of the acceleration sensor exceeds a predetermined threshold level. One of ordinary skill in the art would understand that a break of the interconnecting element would cause a break in the conductive path of the detecting means in the sensor of Seidel et al. Shinji teaches, in the Abstract, an acceleration sensor comprising a first body portion (#1), a second body portion (#8), an interconnecting element making the first body portion integral with the second body portion (#3), wherein the interconnecting element is adapted to *break* (wherein the break is read as an indication containing information identifying a broken detecting loop) when an external force affecting the second body portion of the acceleration sensor exceeds a predetermined threshold level (see Abstract). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus and thus the method of Seidel et al. to have an interconnecting element be breakable, as taught by Shinji, in order to detect when the maximum acceleration was surpassed without use of any special detection circuit (Shinji, see Abstract).

With respect to Claim 27, Seidel et al. further teach the group comprising acceleration sensors responding to forces in at least three different directions (Abstract, line 1).

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With respect to Claim 28, Seidel et al. further teach the detector comprising a conductive strip arranged at least on the interconnecting element (see Fig 1, #7, wherein the detector appears to be a strip).

With respect to Claim 31, Seidel et al. further teach the conductive strip arranged at a distance from the second body portion (see Fig. 1).

With respect to Claim 33, Seidel et al. further teach apparatus, wherein the indication is stored in a memory (column 4, lines 19-25).

With respect to Claims 34 and 40, Seidel et al. further teach the apparatus, wherein the indication is remotely readable (column 4, lines 19-25, wherein the read-only memory of the microprocessor is understood to be remotely readable). It is understood that a status of the apparatus depends on the indication.

With respect to Claim 42, Seidel et al. further teach all of the sensors integrated in a single block (see Fig. 1).

With respect to Claim 43, Seidel et al. further teach the apparatus, wherein an acceleration of any of the sensors of the arrangement is remotely identifiable (column 4, lines 19-34, wherein the read-only memory of the microprocessor is understood to be remote and allows the identification of acceleration of any of the sensors).

With respect to Claim 50, Seidel et al. further teaches registering in a non-volatile memory a status of the breakable component of each sensor (col. 4, lines 20-25, wherein the read only memory is read as a non-volatile memory).

Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Seidel et al. (US 6,122,965) in view of Shinji (JP 62036561) as applied to claim 26 above, and further in view of Bashir et al. (US 5,747,353).

With respect to Claim 29, Seidel et al. in view of Shinji fail to teach the apparatus wherein the detector comprises a conductive strip made of a conductive doped-silicon layer at least on the interconnecting element. Bashir et al. teach, in Figure 5, an acceleration sensor, wherein a detector (#142, wherein the moveable element is read as a detector) comprises a conductive doped-silicon layer (#132). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the interconnecting element of Seidel et al. in view of Shinji to comprise a conductive doped-silicon layer, as taught by Bashir et al., in order to have a monolithic device that has a signal conditioning circuitry fabricated using a silicon-on-insulator (SOI) structure. Thus, the SOI fabricated signal conditioning circuitry will provide a faster output with a lower noise level (Bashir et al., see Abstract).

Claims 41, 47, and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seidel et al. (US 6,122,965) in view of Shinji (JP 62036561) as applied to claim 26 above, and further in view of Heikkinen (EP 1 109 378 A2).

With respect to Claim 41, Seidel et al. in view of Shinji teach the acceleration sensor arrangement adapted to give a warning (wherein the output of the piezoresistors is read as a warning) to a user (wherein it is understood that a user of the sensor would access the memory) when an external force affects the second body portion. However, Seidel et al. in view of Shinji fail to teach a warning given when the external force exceeds a predetermined threshold level. Heikkinen teaches a sensor arrangement adapted to give a warning (wherein the peak signal is read as a warning) to a user (wherein the service technician is read as a user) when an external force affecting the sensor exceeds a predetermined threshold level (column 2, lines 12-15 & column 3, lines 5-16). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device of Seidel et al. in view of Shinji to be adapted to give a warning to a user when an external force exceeds a predetermined threshold level, as taught by Heikkinen, in order to provide a simple and inexpensive means of monitoring the shock to which a mobile electronic apparatus is subjected (column 1, lines 19-21) and to determine if damage caused by the shock will be covered by warranty services (column 1, lines 10-18).

With respect to Claim 47, Seidel et al. in view of Shinji fail to teach the apparatus in a handheld terminal and the apparatus giving an indication to a user of the handheld terminal of when a force exceeding a predetermined threshold is sustained by the handheld device (wherein, a ruptured breakable-component is an indication of the force). Heikkinen teaches a handheld terminal (column 1, lines 1-5, wherein the mobile electronic apparatus is read as a handheld terminal) that is characterized by a sensor arrangement that determines when the handheld device is subjected to excessive force and the sensor arrangement giving an indication (column 3, lines

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10-15, wherein the shock signal record is read as an indication) to a user of the handheld terminal (column 3, lines 10-15, wherein the service technician is read as a user) of a damaged detecting means (column 2, lines 55-58, wherein the jarred diaphragm is read as a damaged detecting means). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device of Seidel et al. in view of Shinji to be utilized in a *handheld terminal* and to provide an *indication to a user of the handheld terminal* of a rupture of the breakable-component, as taught by Heikkinen, in order to provide another application of the apparatus, and a simple means of monitoring the shock to which a mobile electronic apparatus is subjected (column 1, lines 19-21) and to determine if damage caused by the shock will be covered by warranty services (column 1, lines 10-18).

With respect to Claim 48, Heikkinen further teaches, in column 3, lines 5-21, a warning given to a user of the terminal if the indication is active (the downloadable shock signal record is read as being an active indication) when the handheld terminal is switched on (the serviceable mobile phone is read as being a switched-on handheld terminal).

Claims 44/42, 44/43, 45, and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seidel et al. (US 6,122,965) in view of Shinji (JP 62036561) as applied to claim 26 above, and further in view of Tennes et al. (US 4,745,564).

With respect to Claims 44/42 and 44/43, Seidel et al. in view of Shinji fail to disclose that the indication contains the time when the indication was given. Tennes et al. teach an

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acceleration detection apparatus wherein an indication of acceleration contains at least the time when the indication was given (see Abstract). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device of Seidel et al. in view of Shinji to have the indication contain the time when the indication was given, as taught by Tennes et al., in order to have a device that can provide an event-time history that can be read out and analyzed at a more convenient time (Tennes et al. column 2, lines 48-68).

With respect to Claim 45, Seidel et al. in view of Shinji fail to disclose the apparatus packaged as a multichip module together with a means for storing indications containing the time when the indication was given and the identity of the detecting means. A multichip module is read as being a package “featuring both the sensor and the measurement electronics in the same package” (see Applicant’s Specification, page 3, lines 7-9). Tennes et al. teach a detection apparatus containing in the same package, acceleration sensors and a microcomputer (column 3, lines 5-7), wherein the microcomputer is a means for storing indications containing at least the time when the indication was given (see Abstract) and the identity of the detecting means (column 2, lines 60-68, wherein the direction of acceleration is read as the identity of the detecting means). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device of Seidel et al. in view of Shinji to package the apparatus as a multichip module together with a means for storing indications containing the time when the indication was given and the identity of the detecting means, as taught by Tennes et al., in order to have a single device that can provide an event-time history that can be read out and analyzed at a more convenient time (Tennes et al. column 2, lines 48-68).

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With respect to Claim 46, Tennes et al. further teaches the acceleration sensors are integrated together with the means for storing on an integrated circuit that is housed within the package (see Figure 4, wherein the sensors are connected to the storing means on a circuit).

Allowable Subject Matter

Claim 51 and 52 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art provides motivation for utilizing the apparatus in a device, and teaches registering a status of the breakable component when peak signals occur; but fails to teach registering the status at power-up and power-down events of the device (Heikkinen, paragraph 11). Claim 52 has dependency on claim 51 and would also be allowable subject matter if the claim objections were overcome.

Response to Arguments

Applicant's arguments with respect to claims 1-25 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Punam Patel whose telephone number is (571) 272-6794. The examiner can normally be reached on Monday to Friday 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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